

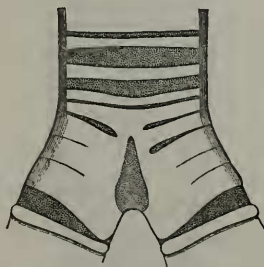
6. Note on some Points in the Anatomy of an Australian Duck (*Biziura lobata*). By W. A. FORBES, B.A., Professor to the Society.

[Received May 16, 1882.]

Two male specimens of *Biziura lobata*, the first the Society has received, were purchased of a dealer in February last; both were in very weak condition when received, and, unfortunately not recovering, did not long survive. The trachea of this bird being, so far as I know, unknown, I take this opportunity of describing it, as well as of adding some notes on other points of its structure.

The trachea is of nearly uniform calibre throughout, with no dilatation anywhere in its course; below it is perhaps a little narrowed as it approaches the bronchi, but in no degree laterally compressed, as it is, e. g., in such genera as *Anser* or *Cereopsis*. There is no syringeal *bulla* formed at its thoracic end, there being merely, as will be seen from the annexed drawing (fig. 1), a simple ossified box,

Fig. 1.



Lower part of the trachea of *Biziura lobata*.

notched in front and behind, and with a narrow pessular bar below. This is formed by the few last tracheal and early bronchial rings co-ossified together, though not equally so on each side, or before and behind. The four or five preceding tracheal rings differ from those higher up the tube in being narrower and of more uniform breadth throughout, not being notched and incompletely ossified in the middle line, both before and behind, as these are. The bronchi are quite normal in structure, being non-dilated, and with partly ossified semi-rings of the ordinary form.

In the non-development of a *bulla*, whether osseous or partly membranous, and in the perfectly simple character of its trachea, *Biziura* differs from all the forms of ordinary Ducks known to me, all the genera of these that have been as yet examined exhibiting, in the male sex, either one or other of (or, more rarely, both) these pecu-

liarities. The condition of the male *Biziura* is nearly identical with that found in the females of other Ducks. Very probably it may be that characteristic of all the *Erismaturinæ*, of which, however, only *Erismatura rubida* has, so far as I know, been examined as regards this point. In that species the syrinx, judging from Macgillivray's

Fig. 2.

Mouth of *Baziura lobata*.

description¹, is quite similar to that of *Biziura*, there being no *tympanum* whatever, but simply a long box formed of several rings united.

The examination of these two specimens has revealed a feature in them very unexpected in Ducks, and only comparable with that found in certain Bustards. This is the possession of a small, but distinct, *subgular pouch*, formed, as in the males of *Otis tarda*, by

¹ Audubon, Orn. Biography, iv. p. 331.

the duplicature of the *frænum linguæ*¹. On opening the mouth, the tongue being forced up against the roof of the mouth as is depicted in fig. 2, there is seen at its base, some way behind the level of the basihyal, a small circular aperture, about the size of a pea, lying between the two folds of the *frænum*, the left of which is much stronger and better developed than the right. This aperture is the mouth of a small pouch, almost large enough to receive the end of the little finger, which extends backwards for some little distance to the base of the tongue, its breadth being nearly as great as that of that organ. This pouch is lined by mucous membrane of similar character to that found over the adjacent parts of the mouth; its anterior limit extends forwards as far as the posterior end of the curious wattle attached to the lower jaw; but there is no connexion between the two, the wattle being merely formed by a fold of the integuments, with no cavity contained in it.

The observations hitherto made on the habits of *Biziura* in its native state fail to throw any light on the use or *raison d'être* of this curious structure, though, judging from analogy, it is nearly certain that it is in some way connected with display during sexual excitement, and therefore confined, as we know the wattle is, to the male sex. The first specimen I examined had, I may remark, the pouch less developed than in the second one, probably an older bird. It is not improbable that further observations may show that, in thoroughly adult and breeding birds, this pouch acquires much greater dimensions than was the case in these two specimens.

As regards other points, *Biziura* is in most of its features thoroughly Anatine. The tongue is quite duck-like, though very broad. There is a well-developed penis of the peculiar type found in other Anatidæ. The number of remiges is 28, of which ten are, as usual, primaries. The pollex bears a small claw. There are 24 rectrices, a number not exceeded in any of the Anseres, though found in certain Swans. All are peculiarly stiff and curved, with flat lamellar rachises. The cæca are long, measuring 6·75 and 7·75 inches respectively in the two specimens. The ambiens muscle is large, and peculiar in that its tendon *perforates* the large-sized triangular patella, just as it does in *Phalacrocorax* and the extinct *Hesperornis*.

The carina sterni is shallow, as might have been expected in a bird with such weak powers of flight as *Biziura* has. There is a minor myological peculiarity in the hind limb of *Biziura*, such as I have not yet observed in other Anserine birds. In all these the *flexor longus hallucis* and *flexor profundus digitorum* blend together towards the lower part of the tarso-metatarsæ, a comparatively very insignificant tendinous slip being given off from the tendon of the first-named muscle to the hallux before it blends with the other². In *Biziura* the two tendons completely blend, but the small tendinous slip, given off, as usual, before they unite, does not go to the *hallux* as it normally does, but continues down to the bottom of the bone, and is there lost on one of the annular masses of fibro-cartilage

¹ Murie, P. Z. S. 1869, p. 140; and Garrod, Coll. Papers, p. 245.

² Garrod, Coll. Papers, pp. 293 and 298.

surrounding the other flexor tendons. The *flexor brevis hallucis*, which is present, though small, is thus the only functional flexor of that digit.

June 6, 1882.

Prof. Flower, LL.D., F.R.S., President, in the Chair.

The Secretary called attention to the curious way in which the young Cormorants, lately hatched in the Gardens, were fed by the parent bird, and exhibited a drawing by Mrs. Hugh Blackburn, taken on the 9th ult., illustrating this subject.

Two Cormorants deposited by Capt. Salvin in the autumn of 1881 had paired in March last, and built a nest of sticks on a stump in the enclosure called the "Gull pond." Two young ones were hatched on the 22nd April last, after four weeks' incubation, both parents taking turns on the nest. The young birds were at first naked, but soon became covered with black down-plumage, whence they were now beginning to moult into their adult dress.



Cormorants and their young (from a drawing by Mrs. Hugh Blackburn).

As would be seen by the illustration, the parents fed the young ones by allowing them to poke their heads far down into the parents' throats and to extract the semidigested fish from the stomach.

In Capt. Salvin's letter to the 'Field' on this subject (vol. lix. p. 693, May 2, 1882) it was stated that the young were only fed in this manner by the male bird; but Mr. Bartlett had assured himself that both male and female parent had been seen to feed the young in the same way.

Mr. H. J. Elwes, F.Z.S., made some remarks on his recent expedition to the Aures Mountains of Algeria, and exhibited a specimen of a Stonechat (*Saxicola*) obtained there, which he believed to be new to science.

The Secretary placed upon the table a series of the Diurnal and Nocturnal Lepidoptera bred in the Insect-House during the past month, and called special attention to specimens of *Attacus roylei* and *Cricula trifenestrata*, both from India, as not having been reared in 1881.

The following papers were read :—

1. Notes on some Points in the Anatomy of the Æluroidea.
By ST.-GEORGE MIVART.

[Received May 9, 1882.]

In studying the Æluroidea for the purpose of trying to ascertain the number and nature of the groups into which that suborder might be best divided, I noted, as carefully as I could, such points in the anatomy of a number of species as I had an opportunity of examining. I now venture to lay before the Society some selections from these notes as a supplement to, and further justification of, the conclusions I lately had the honour of submitting to the judgment of the same Society¹.

It is only the osteology which I have had the opportunity of studying with any approach to completeness; but I have made such notes on the other systems of organs as I have been able to collect.

OSTEOLOGY.

THE AXIAL SKELETON.

The Vertebral Column.

The greatest number of vertebræ of which I have found the spinal column to be composed is 60 (*Arctictis*) and 59 (*Cryptoprocta* and *Paradoxurus*). The smallest number is 33 (in a Manx Cat).

The general range is from 50 (*Suricata*) and 51 (*Cynogale*) to 56 and 57.

¹ P. Z. S. 1882, p. 135.